

6. Compare the density of the snow at the top of the pit with the density in the middle and at the bottom. The density of new snow ranges from about 5% when the air temperature is 14 °F, to about 20% when the temperature is 32 °F. After the snow falls, its density increases due to gravitational settling, wind packing, melting and recrystallization. How did your layers compare?

Snow Water Equivalent (SWE)= Amount of water in snow pack or depth of water resulting if you melted all the snow.

1. Measure snow depth from top of your pit to bottom = _____cm

2. Calculate the average snow density

(#4a + #4b + #4c) ÷ 3 = _____ g/ cm³

3. SWE = average density (#2 above) X Snow Depth (#1 above)

SWE=_____ cm

15. Map/sketch the dominant vegetation types along your route.



Glacier National Park Winter Ecology Field Notes

Name(s): _____ Pack # _____

School: _____ Teacher: _____

Date: _____ Start Time: _____ End Time: _____

Location (GPS coordinates or trail name): _____

Weather Conditions:

Air Temperature=_____ Wind Speed = _____

Wind Chill (use chart)=_____ % Cloud Cover = _____

Other Observations (snowing, raining, etc...) = _____

Equipment Checklist (✓ before & after)

_____ Clipboard & Pencil	_____
_____ Shovel	_____
_____ 2 foam sitting pads	_____
_____ Wind Chill Chart	_____
_____ Snow Crystal Chart	_____
_____ Magnifying glass(es)	_____
_____ Mammal Track ID Card	_____
_____ Map & aerial photo	_____
_____ Winter Tree Key	_____
_____ Compass	_____
_____ Calculator	_____
_____ Wind Speed Indicator	_____
_____ Ruler	_____
_____ Tin can	_____
_____ 2 thermometers	_____
_____ Spring Scale	_____

Don't forget!

* Hat
* Gloves
* Lunch
* Water



Animal/Insect Signs

#	Sign (track, scat, browse, etc)	Location	Description (straddle, stride, other observa- tions)
1	Scat	on trail	dry, full of gray fur, 3 small clumps, fox?
2	Track	across trail	deer - multiple animals (3), heading west from creek
3	Animal Sighting	trailhead	Pileated Woodpecker drill- ing on lodgepole snag.
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Snow Observations

- Location of snow pit _____
Surface Snow _____ Middle of pit _____ Temperature _____
- Temperature _____ 3. Temperature _____ 4. at ground _____

Example:

Surface - icy crust
Soft, and fluffy
Icy
Medium hardness
Loose, like sugar

Your Snow Pit Profile:

- Snow Crystals (use classification chart to describe most dominant type in surface layer of snow) _____

Calculate percent density of different layers of snow

- Mass of tin can & bag = _____ grams (measure with spring balance)
- Mass of can plus snow (make sure not to pack snow) from:
 - Top of pit = _____ g - _____ (#1) = _____ g snow mass
 - Middle of pit = _____ g - _____ (#1) = _____ g snow mass
 - Bottom of pit = _____ g - _____ (#1) = _____ g snow mass
- Volume of tin can $(\pi)r^2h = (3.14)(2.5 \text{ cm})^2(8 \text{ cm}) = 157 \text{ cm}^3$
- Density of snow = mass of snow (#2) / volume of can (#3)
 - Top of pit = (#2a) / $157 \text{ cm}^3 = \frac{\quad}{\quad} \text{ g/cm}^3$
 - Middle of pit = (#2b) / $157 \text{ cm}^3 = \frac{\quad}{\quad} \text{ g/cm}^3$
 - Bottom of pit = (#2c) / $157 \text{ cm}^3 = \frac{\quad}{\quad} \text{ g/cm}^3$
- Convert density answer in #4 to percent density (multiply by 100)

_____ (#4a answer) x 100 = _____ percent density of top

_____ (#4b answer) x 100 = _____ percent density of middle

_____ (#4c answer) x 100 = _____ percent density of bottom